Weekly Wastewater Surveillance Report

During the week ending December 29, 2024

Key Takeaways

SARS-CoV-2 detection level was categorized as:
Regional[1]

57 out of 62 counties in NYS reported wastewater data

163 participating wastewater treatment plants

15 million New Yorkers covered

222 community-level wastewater samples tested

64 samples had quantifiable levels

1% NYS (excluding NYC) relative increase over the previous week

-1% NYC relative increase over the previous week

[1] **Not Detected:** No SARS-CoV-2 detected in wastewater in NYS.
Sporadic: SARS-CoV-2 detected below limits of quantification in the wastewater.
Local: Increased or quantifiable levels of SARS-CoV-2 detected in a single region of NYS; sporadic in rest of state.
Regional: Increased or quantifiable levels of SARS-CoV-2 detected in at least 2 regions but in fewer than 31 of 62 counties.
Widespread: Increased or quantifiable levels of SARS-CoV-2 detected in more than 31 of the 62 counties.

The New York State Department of Health (NYSDOH) collects and analyzes wastewater data on SARS-CoV-2, the virus that causes COVID-19, and produces this weekly report on SARS-CoV-2 detection levels, trends over time, and the percent of the population included in wastewater surveillance efforts.

Participating wastewater treatment plant operators provide wastewater samples, analyses are conducted at contracted laboratories, and data results are provided back to the county and state to inform public health awareness and responses, as necessary.

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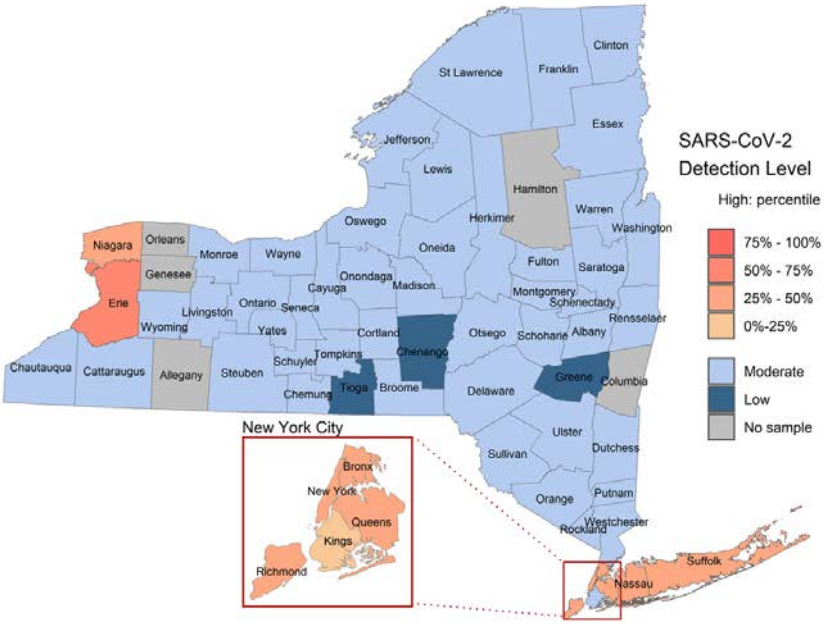
Detection level of SARS-CoV-2 in Wastewater

SARS-CoV-2 detection level is displayed in three categories: Low, Moderate, and High.

These detection levels correlate with estimated COVID-19 community transmission levels:

- **Low** detection levels correlate with approximately less than 10 cases per 100,000 population in the past week.
- **Moderate** detection levels correlate with approximately 10 to 50 cases per 100,000 population in the past week.
- **High** detection levels correlate with more than 50 cases per 100,000 population in the past week, which are further broken down by quantiles based on historical data.

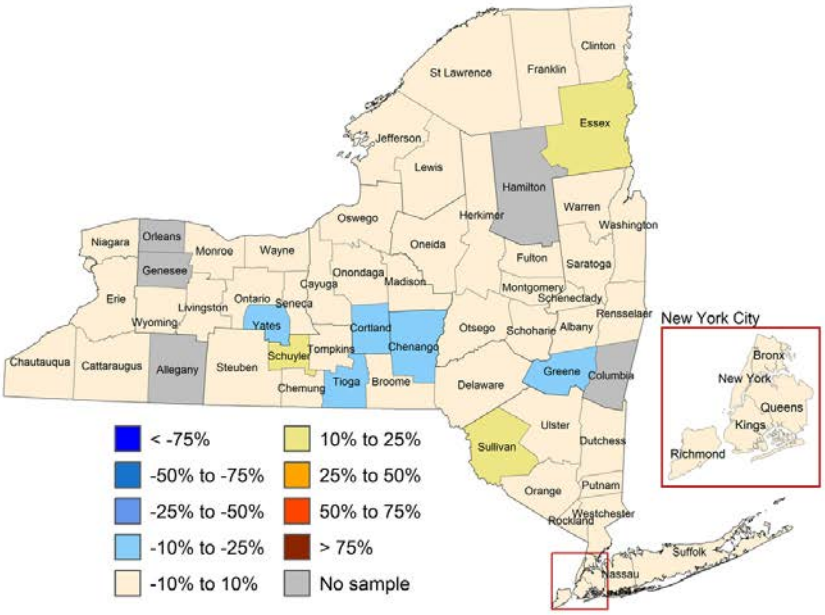


Trends in SARS-CoV-2 Measured in Wastewater Over the Past Two Weeks

The two-week trends of SARS-CoV-2 in wastewater are estimated for each county in NYS.

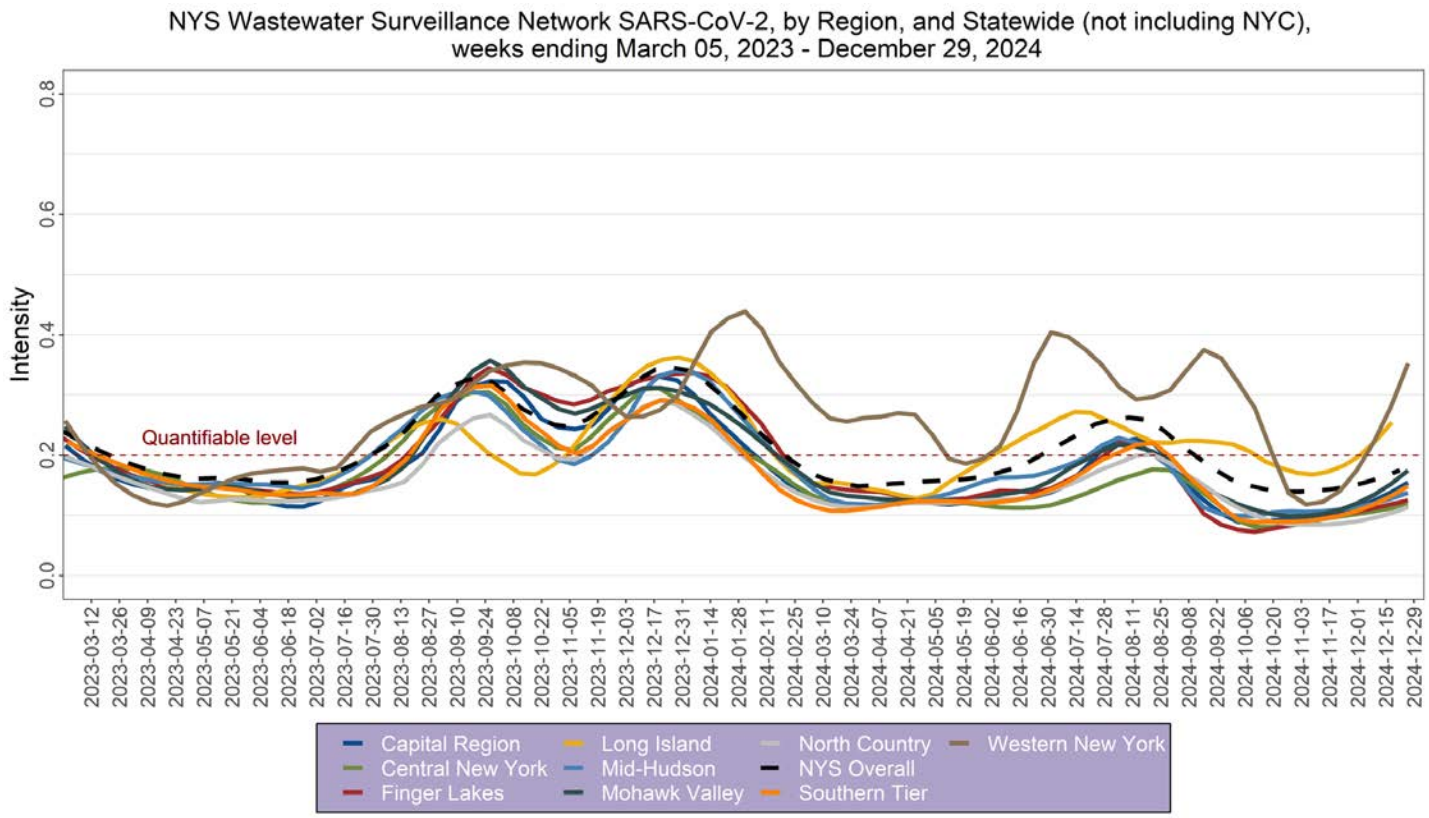
Trends represent the total percent changes of the SARS-CoV-2 detection level (map above) from prior week.

Percent changes from prior week are calculated from the slope of linear regressions.



Trends in SARS-CoV-2 Measured in Wastewater By Region

Trends of SARS-CoV-2 in wastewater are estimated for each region in NYS. These trends correspond with the amount of SARS-CoV-2 transmission over time.



Intensity is defined as the average of wastewater SARS-CoV-2 RNA level that is normalized based on human fecal indicator (weighted by population served by the wastewater treatment plants).

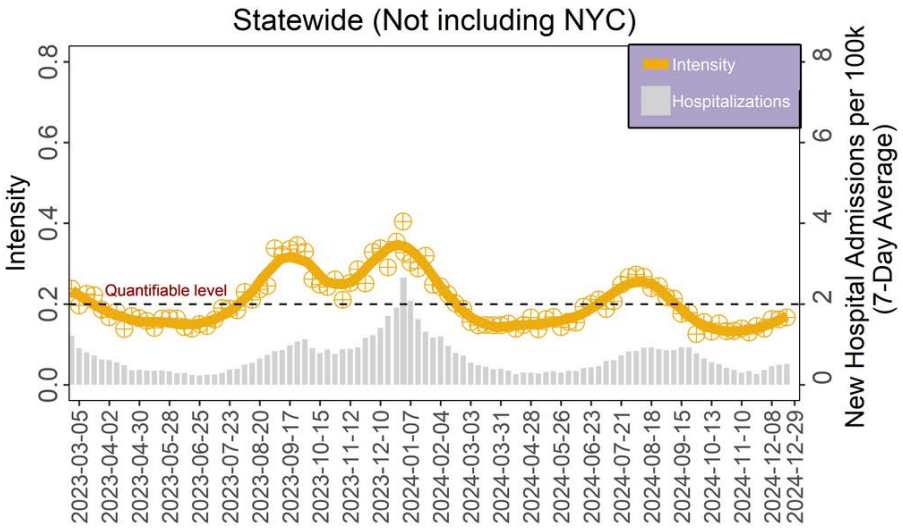
The quantifiable level is characterized as the average normalized wastewater RNA level that corresponds to being at substantial to high SARS-CoV-2 transmission (50 reported cases per 100,000 population).

Trends in SARS-CoV-2 Measured in Wastewater Statewide

SARS-CoV-2 intensity above the quantifiable level indicates higher levels of SARS-CoV-2 in wastewater.

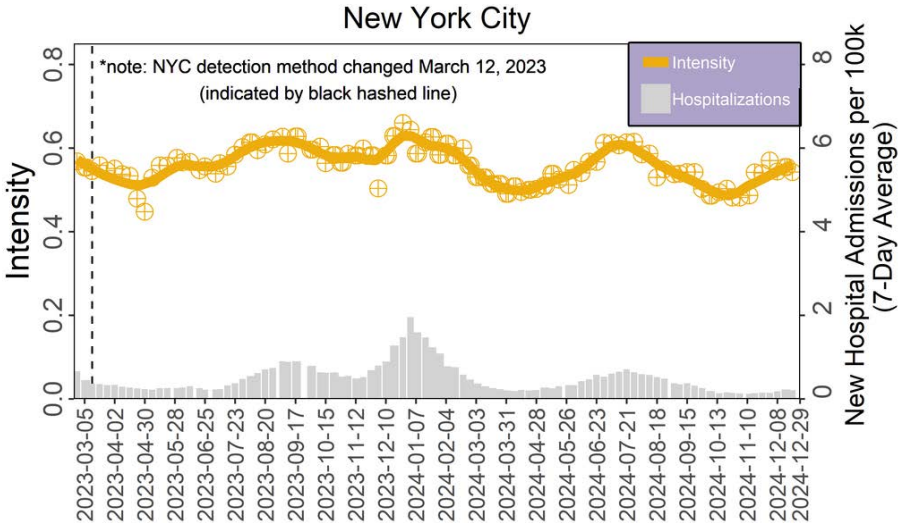
In addition, weekly average new hospital admissions per 100,000 population are shown indicating COVID-19 infections in the community.

Wastewater surveillance has the potential to serve as an early indication of increasing or decreasing COVID-19 transmission.



Trends in SARS-CoV-2 Measured in Wastewater New York City

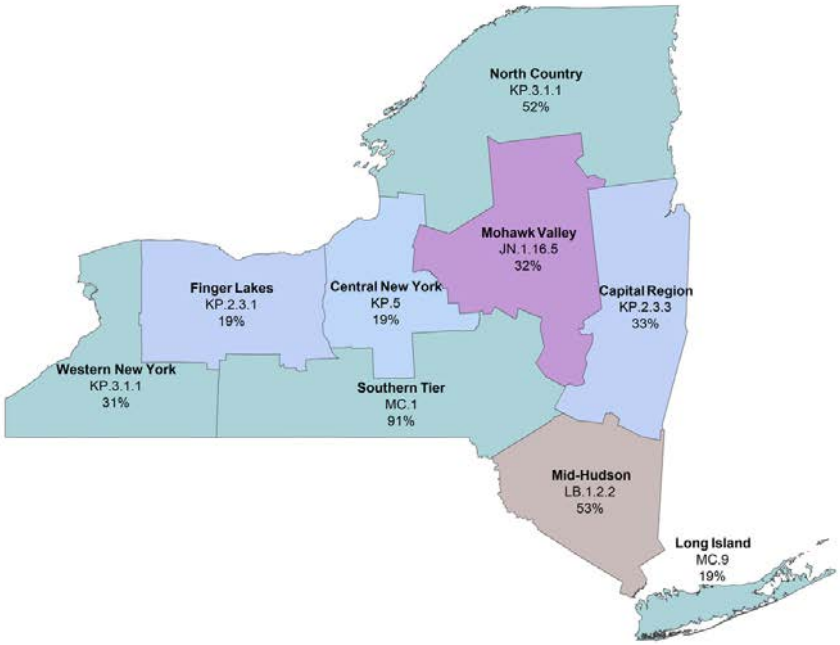
In New York City, the intensity of SARS-CoV-2 RNA in Wastewater is normalized based on flow rate.



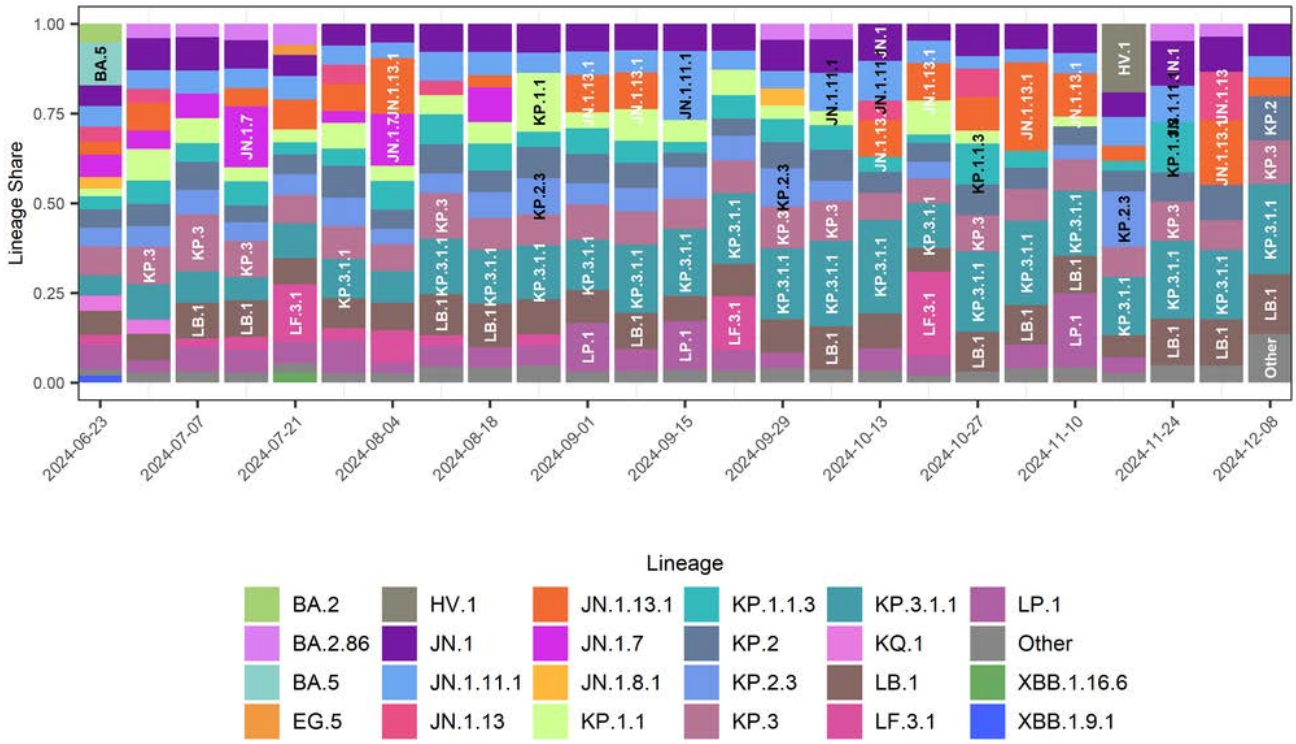
Genetic Sequencing of SARS-CoV-2 in Wastewater

The dominant variant and percent abundance is shown for each economic development region in NYS.

The regional variant abundance accounts for all sewersheds in the region.



Aggregation of SARS-CoV-2 genetic sequencing - Statewide



Bars show the relative abundance of SARS-CoV-2 lineages per sample week for the last 6 months. Lineages are defined by CDC Nowcast and lineages with an abundance of at least 10% are labeled on their bar sections.

Percent of County Population Currently Served by the NYS Wastewater Surveillance Network

Wastewater Surveillance Methods

Data presented in this report are based on wastewater data reported to the New York State Department of Health (NYSDOH) as of the current week.

To identify how wastewater results are changing over time, a two-week trend analysis is calculated for each location using all data points within the past two weeks of the most recent sample for that location. We calculate the percent change by standardizing levels of log-transformed SARS-CoV-2 to the levels of log-transformed human fecal indicator (or wastewater treatment plant flow) and fitting a population-weighted linear regression over the past two weeks of data.

Regional and statewide trends are estimated using a population-weighted regression of measured levels of log-transformed SARS-CoV-2 RNA in wastewater, standardized to log-transformed human fecal indicator or flow rate. Trend lines are smoothed using locally estimated scatter-plot smoothing (LOESS).

Genetic sequnecing results are aggregated to the regional and state level using a population weighted mean of variant and lineage abundances for each sewershed. Variants and lineages are defined by CDC Nowcast. Sequencing data may lag behind concentration data due to additional processing time.

Additional Resources

Information about wastewater surveillance in NYS is available from the NYSDOH website at https://health.ny.gov/environmental/wastewater

National Wastewater Surveillance System (NWSS) data is available on CDC's website at https://www.cdc.gov/healthywater/surveillance/wastewater-surveillance/wastewater-surveillance.html

For information about the NYS Wastewater Surveillance Network, please visit https://nywastewatcher.io

The dashboard for the NYS Wastewater Surveillance Network can be found at http://covid.nywastewatcher.io/

Information about NYC Wastewater Testing is available at https://www1.nyc.gov/site/dep/whats-new/covid-19-wastewater-testing.page